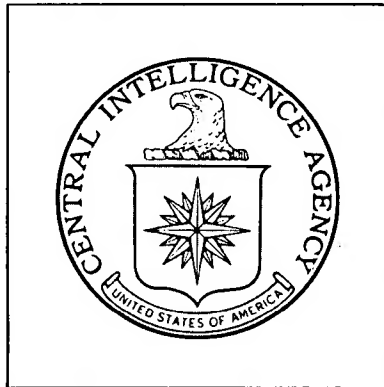


**Top Secret**



**DIRECTORATE OF  
INTELLIGENCE**

**Industrial Facilities  
(Non-Military)**

*Basic Imagery Interpretation Report*

**Wu-wei Copper Smelter and Refinery  
China**

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CENTRAL INTELLIGENCE AGENCY  
Directorate of Intelligence  
Imagery Analysis Service

## INSTALLATION OR ACTIVITY NAME

COUNTRY

Wu-wei Copper Smelter and Refinery

CH

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UTM COORDINATES

GEOGRAPHIC COORDINATES

COMIREX NO.

NIETB NO.

48STT550650

38-30-00N 102-11-20E

None

None

## MAP REFERENCE

AMS. Series 1505, Sheet NJ48-5, 1st edition. 1967. Scale 1:250,000

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## LATEST IMAGERY USED

NEGATION DATE (If required)

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## ABSTRACT

Wu-wei Copper Smelter and Refinery includes ore concentration, smelting, and refining facilities. The primary product is refined copper. Other metals such as gold, silver, lead, zinc, and nickel may be extracted from the smelter and refinery waste products. The plant also contains a possible sulfuric acid production facility.

The plant was first observed under construction in June 1965. It was externally complete in August 1966. Between November 1967 and June 1971, the concentration building was gradually enlarged. No construction was observed at the plant on the latest coverage in June 1971. The plant was first seen operating in October 1969, and it has been operating on all coverage since that time.

This report includes an annotated photograph of the plant and a discussion of the operational status.

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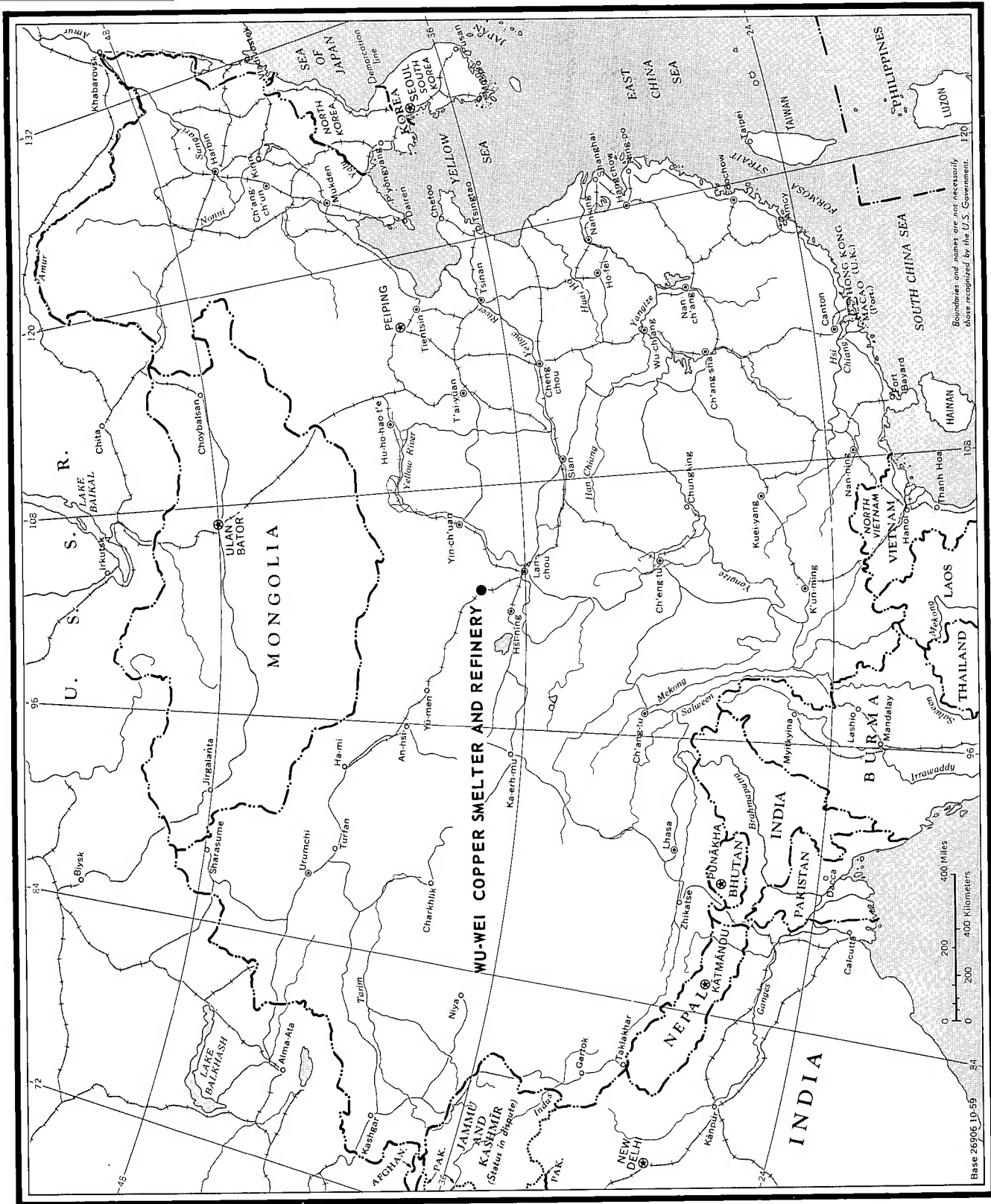
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FIGURE 1. LOCATION MAP.

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## INTRODUCTION

Wu-wei Copper Smelter and Refinery is located approximately 39 nautical miles (nm) northwest of Wu-wei, and 170 nm north-northwest of Lan-chou. Other industrial facilities in the area include Wu-wei Copper Smelter, 1.5 nm west of the plant, and two power plants in the town of Ho-hsi-pao, approximately 11.5 nm southwest of the plant (see Figures 1 and 2).

Ore is obtained from an open pit mine approximately 2 nm west of the plant. Electric power is supplied through a transformer yard immediately south of the plant.

## BASIC DESCRIPTION

### Physical Features

The plant occupies a rectangular area approximately 3,200 by 1,900 feet containing about 210 acres (see Figure 3). It is at the base of foothills of the Tung-ta Mountains. There are no apparent physical security measures. Most of the surrounding area is undeveloped leaving room for expansion.

The plant is served by road and by a rail spur from the main rail line between Lan-chou and Urumchi.

### Operational Functions

The major plant facilities are a concentrator, a smelter, and a refinery. The plant also contains a possible sulfuric acid production facility and two unidentified facilities (see Figure 3).

Ore is brought by rail from the mine to the ore receiving building where it is crushed, ground, and fine-ground. It is then concentrated, sintered in kilns, and smelted in blast furnaces to form copper matte. The matte is piped into converters where blister copper is produced by an induced-air process. The blister copper is then cast into anodes and sent to an electrolytic cell building where the copper is electrolytically refined in an acid bath. Copper anodes produced in the nearby Wu-wei Copper Smelter are also probably refined in the electrolytic cell building. Acid storage and regeneration facilities are located east of the refinery.

Waste gases and fumes from the smelting process may be used to produce sulfuric acid. Waste products from the concentration building and the smelter may be processed at an unidentified facility west of the smelter for extraction of other metals present in the ore such as lead, zinc, or nickel. Metals such as gold and silver may be extracted from the refinery waste at an unidentified facility north of the refinery.

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Construction and Operational Status

In June 1965 initial site preparations for the copper smelter and refinery were observed. By August 1965 the refinery and several unidentified facilities were under construction. In March 1966 foundations for the smelter and concentration building were evident. In August 1966 the plant was externally complete. Between November 1967 and June 1971, the concentration building was gradually enlarged. No construction was observed at the plant on the latest coverage in June 1971.

The plant was first seen operating in October 1969. Smoke from the stacks and rail car activity indicate that it has been operating on all coverage since that time.

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REFERENCES

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Map

AMS. Series 1505 Sheet N148-5. 1st edition. 1967. Scale 1:250,000  
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Document

NPIC. Non-Ferrous Metals Complex, China, August 1969  
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Requirement

COMIREX N09  
Support Number

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